

What Is a Pareto Chart?

- Bar chart arranged in descending order of height from left to right
- Bars on left relatively more important than those on right
- Separates the "vital few" from the "trivial many" (Pareto Principle)

Why Use a Pareto Chart?

- Breaks big problem into smaller pieces
- Identifies most significant factors
- Shows where to focus efforts
- Allows better use of limited resources

Constructing a Pareto Chart

Step 1 - Record the data

Step 2 - Order the data

Step 3 - Label the vertical axis

Step 4 - Label the horizontal axis

Step 5 - Plot the bars

Constructing a Pareto Chart

Step 6 - Add up the counts

Step 7 - Add a cumulative line

Step 8 - Add title, legend, and
date

Step 9 - Analyze the diagram

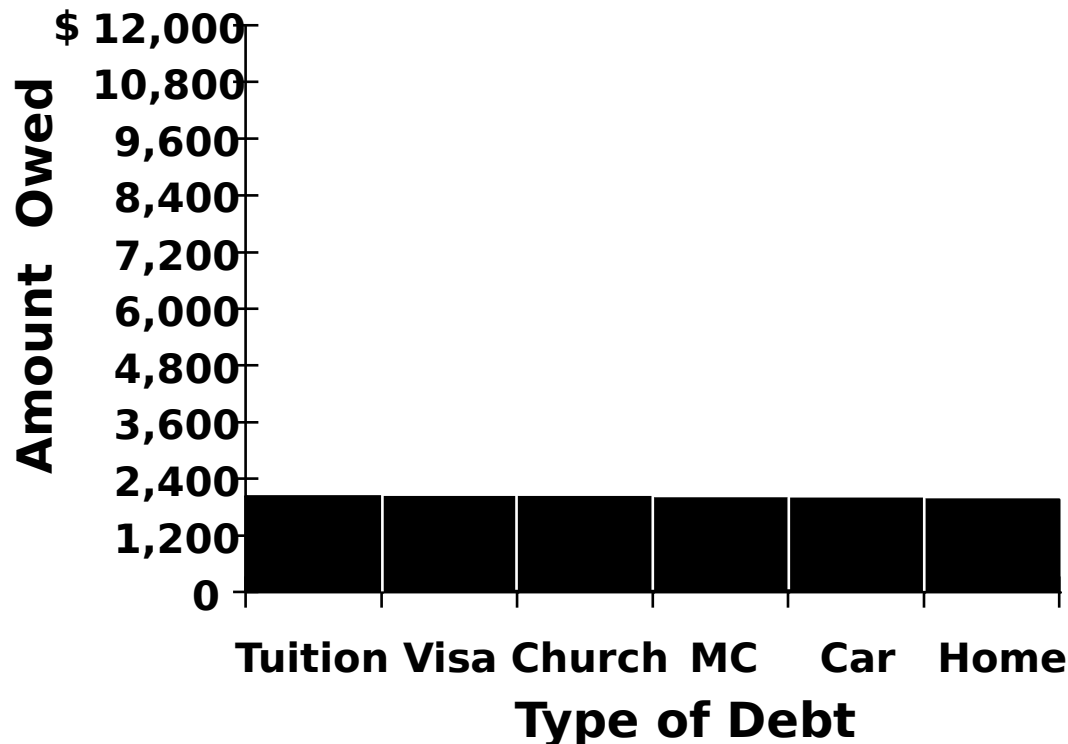
Analysis Sheet Example

Outstanding Debts

Category	Amount (\$)
School tuition (monthly installments)	2,030
Visa	2,007
Church pledge (monthly installments)	2,000
Mastercard	1,983
Balance of car loan	1,971
Home improvement loan balance	1,956
Total	11,947

Pareto Chart Example

Outstanding Debts



LEGEND: AMOUNT OWED ON OUTSTANDING DEBTS AS OF 12 FEB 95.

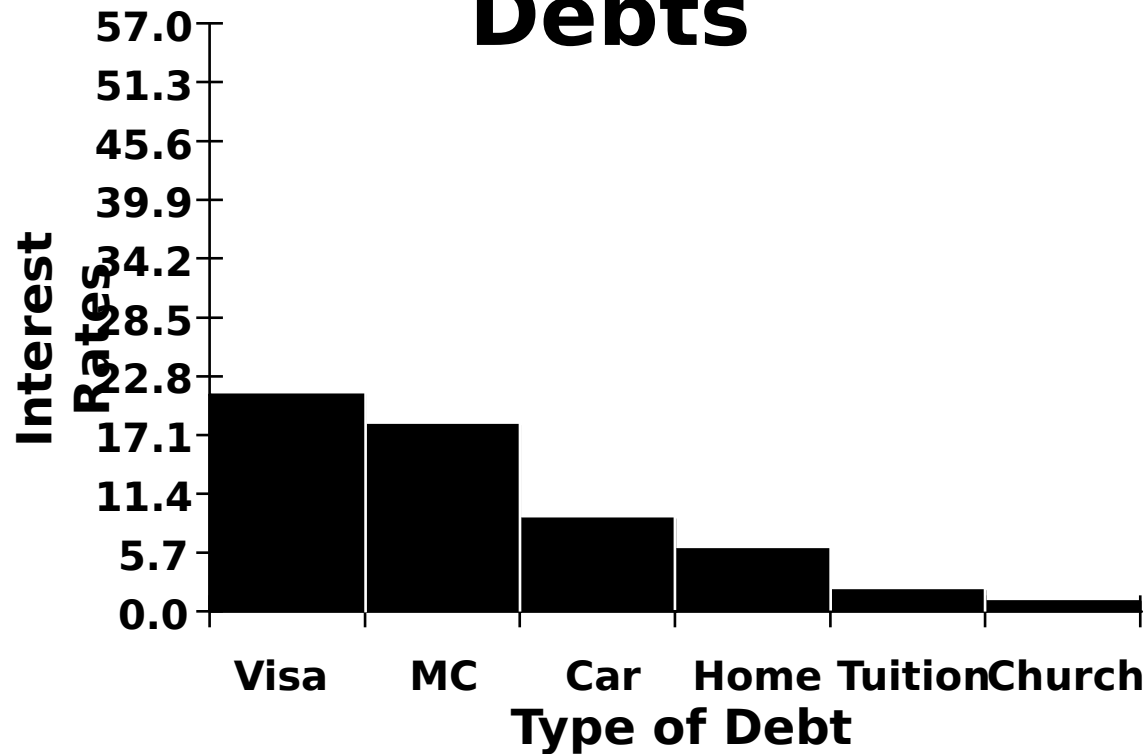
Analysis Sheet Example

Interest Rates on Outstanding Debts

Category	Int. Rate
Visa	21 ^(%)
Mastercard	18
Balance of car loan	9
Home improvement loan balance	6
School tuition (monthly installments)	2
Church pledge (monthly installments)	1

Pareto Chart Example

Interest Rates on Outstanding Debts



LEGEND: INTEREST RATES CHARGED ON OUTSTANDING DEBTS AS OF 12 FEB 95.

Data on BEQ / BOQ Complaints

Complaint	Feb	Mar	Apr	Total
Loud stereo noise after 2300	30	50	17	97
Insufficient hot water	23	20	11	54
Towels too small and/or thin	12	8	12	32
Inadequate lighting	175	100	75	350
Poor quality TV reception	10	13	60	83
Worn-out furniture	1	4	10	15
Insufficient storage space	25	52	50	127
Cockroaches	324	265	373	962
Rooms too warm or too cold	300	110	95	505

EXERCISE 1 ANALYSIS SHEET ANSWER KEY

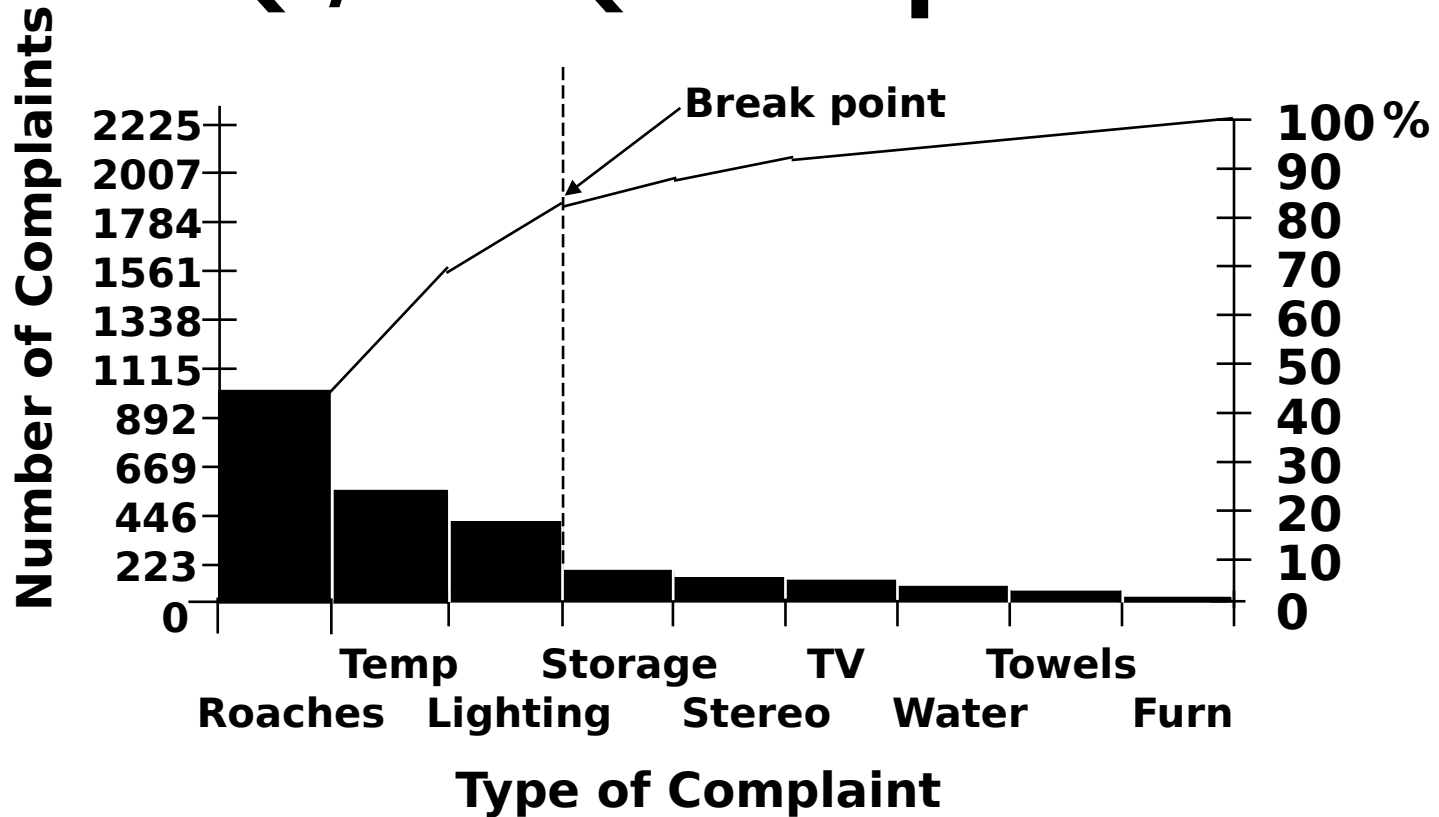
BEQ / BOQ Complaints

Category	Amount	Percent	Cum. % *
Cockroaches	962	43.2	
Rooms too warm or cold	505	22.7	43.
Inadequate lighting	350	15.7	65.
Insufficient storage space	127	5.7	81.
Loud stereo noise after 2300	97	4.4	87.1
Poor quality TV reception	83	3.7	95.4
Insufficient hot water	54	2.4	97.8
Towels too small and/or thin	32	1.4	99.2
Worn-out furniture	15	0.7	99.9
Total	2225		

* Cumulative percent column does not equal 100% because of rounding.

EXERCISE 1 PARETO CHART ANSWER KEY

BEQ / BOQ Complaints



LEGEND: COMPLAINTS RECORDED IN BEQ / BOQ, 1 FEB - 30 APR 95.

Data on Injuries by Department

	FALL	EYE INJURY	CUT / ABRASION	SPORT	MOTO VEHICLE
ADMIN	0	0	2	3	0
OPS	1	0	1	2	1
MAINT	7	3	5	16	9
SAFETY	0	0	1	1	1
TRAIN	0	1	0	1	2

Data on Injuries by Personnel Assigned

	FALL	EYE INJURY	CUT / ABRASION	SPORT	MOTO VEHICL E
ADMIN	0.0	0.0	0.2	0.3	0.0
OPS	0.1	0.0	0.1	0.2	0.1
MAINT	0.035	0.015	0.025	0.08	0.045
SAFETY	0.0	0.0	0.2	0.2	0.2
TRAIN	0.0	0.2	0.0	0.2	0.4

EXERCISE 2A ANALYSIS SHEET ANSWER KEY

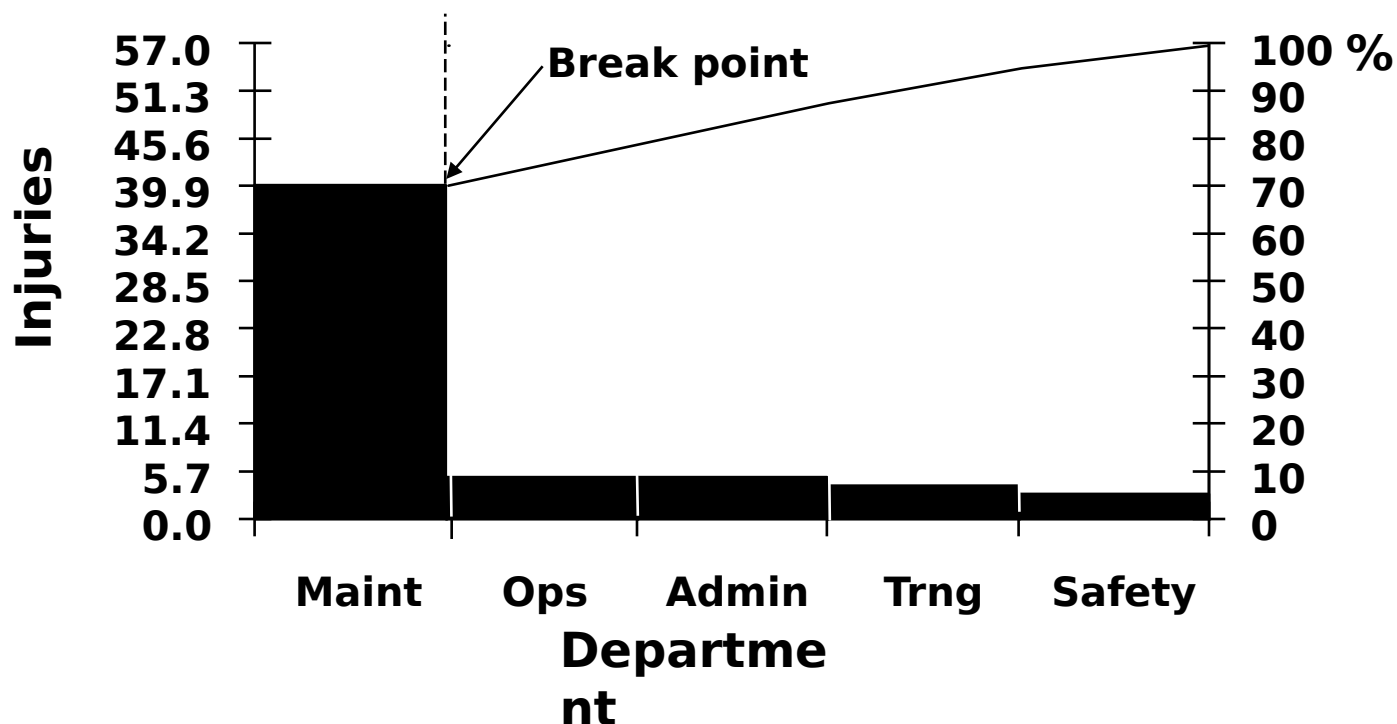
Injuries by Department

Category	No. Injuries	Percent	Cum. % *
Maintenance	40	70.2	70.2
Operations	5	8.8	79.0
Admin	5	8.8	87.8
Training	4	7.0	94.8
Safety	3	5.3	100.1
Total	57		

* Cumulative percent column does not equal 100% because of rounding.

EXERCISE 2A PARETO CHART ANSWER KEY

Injuries by Department



LEGEND: INJURIES TO SQUADRON PERSONNEL 1 FEB - 30 APR 95.

EXERCISE 2B ANALYSIS SHEET ANSWER KEY

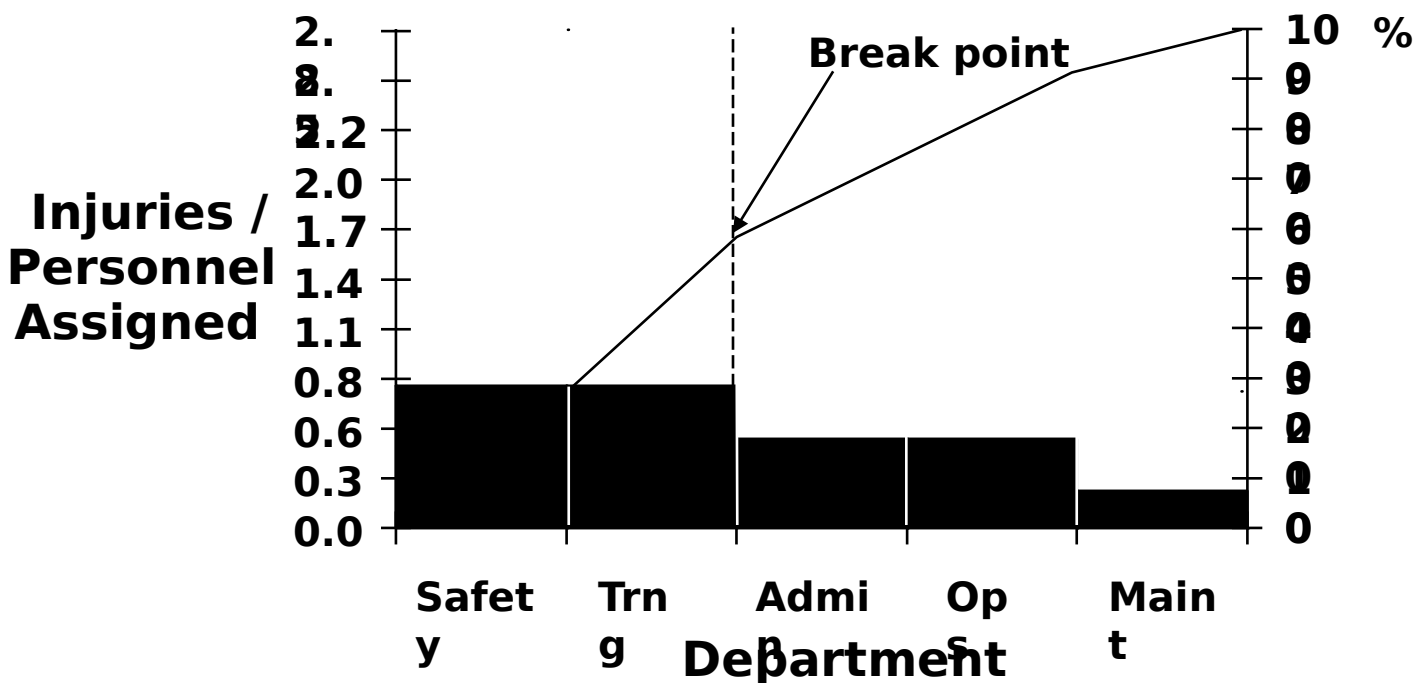
Injuries by Personnel Assigned

Category	Injury Rate	Percent	Cum. % *
Safety	0.80	28.6	28.6
Training	0.80	28.6	57.2
Admin	0.50	17.9	75.1
Operations	0.50	17.9	93.0
Maintenance	0.20	7.1	100.1
Total	2.80		

* Cumulative percent column does not equal 100% because of rounding.

EXERCISE 2B PARETO CHART ANSWER KEY

Injuries by Personnel Assigned



LEGEND: INJURIES TO SQUADRON PERSONNEL 1 FEB - 30 APR 95.
BASED ON NUMBER OF PERSONNEL ASSIGNED.

Data on Injuries by Department

	FALL	EYE INJURY	CUT / ABRASION	SPORT	MOTO VEHICL E
ADMIN	0	0	2	3	0
OPS	1	0	1	2	1
MAINT	7	3	5	16	9
SAFETY	0	0	1	1	1
TRAIN	0	1	0	1	2

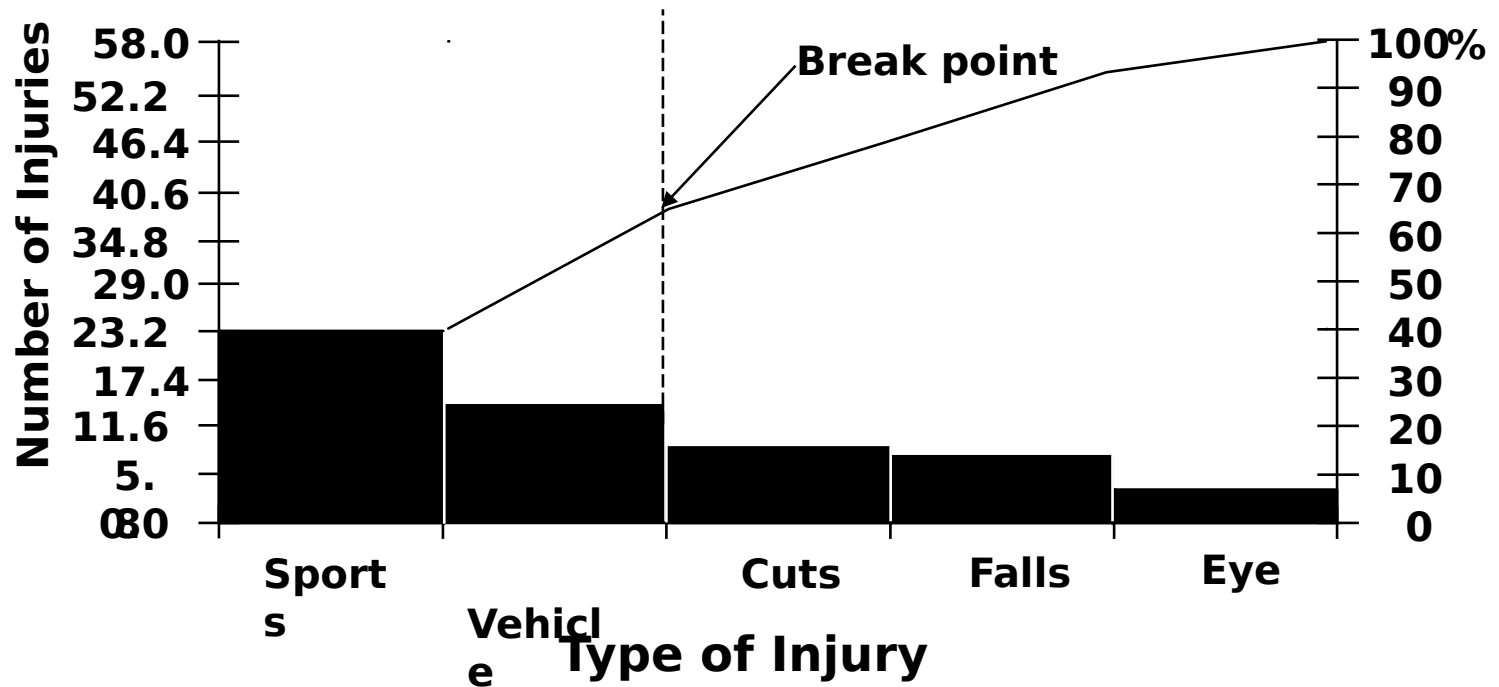
EXERCISE 2C ANALYSIS SHEET ANSWER KEY

Injuries by Type

Category	No. Injuries	Percent	Cum. %
Sports	23	40.4	40.4
Motor vehicle	13	22.8	63.2
Cuts/abrasions	9	15.8	79.0
Falls	8	14.0	93.0
Eye injuries	4	7.0	100.0
Total	57		

EXERCISE 2C PARETO CHART ANSWER KEY

Injuries by Type



LEGEND: INJURIES TO SQUADRON PERSONNEL 1 FEB - 30 APR 95. BASED ON TYPE OF INJURY.

Little League Yankees Stats

Type of Error	Number
Wild pitch	5
Missed fly ball to the outfield	29
Missed grounder	7
Missed pop fly to the infield	4
Missed coaching signal	5
Taken third strike	42
Throw to wrong cutoff player	25
Failure to back up the play	6
Passed ball	3

EXERCISE 3 ANALYSIS SHEET ANSWER KEY

Stats for Little League

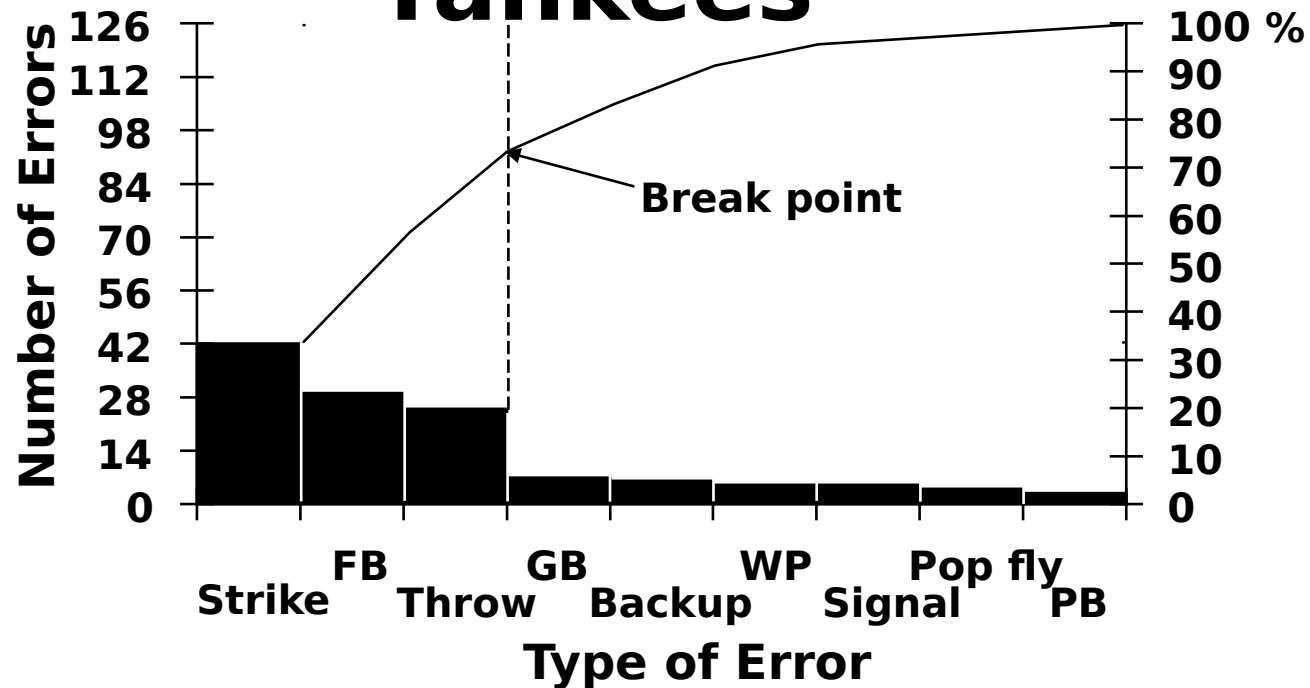
Yankees

Type of Error	Number	Percent	Cum. % *
Taken third strikes	42	33.3	33.3
Missed fly balls	29	23.0	56.3
Throws to wrong cutoff player	25	19.8	76.1
Missed grounders	7	5.6	81.7
Failure to back up play	6	4.8	86.5
Wild pitches	5	4.0	90.5
Missed coaching signals	5	4.0	94.5
Missed pop flies	4	3.2	97.7
Passed balls	3	2.4	100.1
Total	126		

* Cumulative percent column does not equal 100% because of rounding.

EXERCISE 3 PARETO CHART ANSWER KEY

Stats for Little League Yankees



LEGEND: ERRORS COMMITTED DURING FIRST FIVE GAMES OF SPRING SEASON 1995.